



## KEMGROUT HD

High performance expanding non-shrink cementitious grout

### Description

A pourable cement base, non-shrink, hydraulic compound especially formulated for heavy duty support under machine base plate, cranes, rails ...etc.

The material is a blend of Portland cement, pre-graded fillers and additives which impart controlled expansion in the plastic state whilst minimizing water demand. The low water requirements ensure high early strength and long term durability. The filler grading is designed to aid uniform mixing and minimize segregation and bleeding.

### Where to use

**KEMGROUT HD** used for general purpose grouting over a wide range of applications, included heavy duty support under machine base plates, cranes, rails and stanchion bases. Also performed as an anchoring for masts, anchor bolts... etc.

### Advantages

- Ready to use pre-packed material that eliminates the possibility of site batching variations.
- No metallic filler used which cause staining or deterioration due to rust expansion.
- Rapid gain of strength facilitating rapid installation and early operation of plant.
- Excellent mechanical properties and low permeability ensures the long term performance of the grout.

### Properties

KEMGROUT HD shall meet and exceed the requirements of ASTM C1107 Grade B or C and CRD-C621.

#### Mechanical properties:

Age (days)	Flowable	Trowable
1	25 N/mm <sup>2</sup>	35 N/mm <sup>2</sup>
7	40 N/mm <sup>2</sup>	50 N/mm <sup>2</sup>
28	55-65 N/mm <sup>2</sup>	75 N/mm <sup>2</sup>

Flexural strength: BS 4551, 1990 (For flowable consistency at 20°C), ASTM C 348-95

Age (days)	Flowable
7	4 -5 N/mm <sup>2</sup>
28	10-11.0 N/mm <sup>2</sup>

- Ultimate anchorage bond strength: 40 N/mm<sup>2</sup> for concrete after 24 hrs.
- Coefficient of thermal expansion 11X10<sup>-6</sup> per °C.
- Thermal conductivity: 1.5 w/m °C
- Density: 2.0 kg/lit

#### Expansion properties:

An expansion of 1-4%. Compensates for

### How to use

#### Surface preparation:

**Concrete surface:** Must be free from oil. Grease, or any loosely adhering material. If the concrete surface is defective or has laitance, it must be cut back to a sound base. Bolt holes or fixing pockets must be blown clean of any dirt debris.

**Steel base plate:** All rust traces must be removed either by mechanical means (e.g. abrasives) or by a suitable rust remover. The undersides and edges of steel plate should then be cleaned from oil and dirt then protected with KEMPRIM M to prevent rust formation and ensure bonding with the KEMGROUT HD

#### Mixing:

The quantity of water required to achieve the desired consistency and volume used should be in accordance with the following:

Consistency on mixing	Water content at 23°C (lit/25 kg. Sack)
Flowable	3 – 3.25
Trowable	2.25 – 2.75



- For best results a mechanically powered grout mixer should be used.
- The selected water content should be accurately measured into the mixer. Slowly add the total contents of the KEMGROUT HD sack, add and mix continuously for 5 min. ensuring homogenous consistency.

**Application :**

- Place the grout within 20 min. of mixing to gain benefit of the expansion process.
- KEMGROUT HD may be placed in thickness up to 100 mm. in a single pour when used as an under plate grout.
- For thicker sections it is necessary to fill out KEMGROUT HD with well graded silt-free aggregates to minimize temperature rise.
- Pouring should be from one side of the void to eliminate the entrapment of air or surplus pre-soaking water.
- The grout head must be maintained at all times, so that a continuous grout front is achieved.
- Where large volumes have to be placed KEMGROUT HD may be pumped. A heavy duty diaphragm pump is recommended for this purpose. Screw feed and piston pumps are also suitable.

**Curing:**

On completion of the grouting operation, exposed areas which are not to be cut back should be thoroughly cured by means of water application, KEMCURE or wet hessian.

**Specific application:**

- Grouting under base plates: Use flowable consistency.
- Grouting anchor bolts: Use trowable consistency.
- Grouting large volumes: For sections thicker than 100 mm. It is necessary to fill the KEMGROUT HD with graded 10 mm. silt-free aggregate to minimize temperature.
- The quantity of aggregate should not exceed 1 part aggregate to one part KEMGROUT HD by weight. For such mixes a conventional concrete mixer and pump should be used.
- Unrestrained areas of width exceeding 50mm should be trowelled after two hours from mixing.

**Theoretical Coverage:**

2 kg/ m<sup>2</sup>/ 1mm thick.

**Packaging**

KEMGROUT HD is supplied in 25 kg sacks.

**Storage**

KEMGROUT HD has a shelf life of 12 months if kept in sealed bags in dry place

**Health and Safety**

- Use gloves when handling dry powder.
- Do not breathe dust, use a practical mask.